



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/029,035

12/28/2001

Young Ho Bae

3449-0921PUS1

3483

2292 7590 08/28/2009  
BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

KACKAR, RAM N

ART UNIT

PAPER NUMBER

1792

NOTIFICATION DATE

DELIVERY MODE

08/28/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/029,035	BAE, YOUNG HO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ram N. Kackar	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-8,10,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,10, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/12/2009 has been entered.

### ***Drawings***

2. The drawing corrections received on 10/19/2004, 5/11/2005, 5/3/2006, 12/8/2006, 10/12/2007, 4/16/2008 and 1/7/2009 are not acceptable.

The drawings dated 6/12/2009 although improved, still have following deficiencies.

1. Fig 4A, 4C and 4D lack proper explanation and appear to be deficient.
2. Drawings submitted as informal drawings for understanding the Load/Unload and substrate bending are not formally submitted.

Further, the depiction of stopper pins and the measure of sliding portion is different from the original drawings and appear to include new matter.

### ***Specification***

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms that are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first

Art Unit: 1792

paragraph. It is further required that no new matter is added. Piece meal changes to the specification submitted on 3/1/2004, 10/19/2004, 5/11/2005, 5/3/2006, 12/8/2006, 10/12/2007, 4/16/2008, 1/7/2009 and 6/12/2009 have not made it more clear concise and exact as per the requirement.

The latest specification has inconsistencies related to load/unload and processing sequence.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 4-8, 10 and 16-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this instance the limitation “wherein a length of said sliding portion, measured from said groove, is about 10 mm” appears to be a new matter. It appears that groove and sliding portion are contiguous. The new drawings show the distance from the stopper pin to inner edge of the sliding portion. There is no support for this in the original specification.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1792

7. Claims 1, 4-8, 10 and 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 the limitation “wherein a length of said sliding portion, measured from said groove, is about 10 mm” is indefinite.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**9. Claims 1, 4-8, 10 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of Tepman et al (US 5589224).**

Applicants admitted prior art (AAPA) as disclosed in Figs 1 to Fig 4 A, B, C and D and the specification paragraphs 2-23 discloses all limitations of these claims including the support bar, lift pins and robot arm.

AAPA does not disclose the groove to collect material disposed on the susceptor and possibly increasing the dimension of the so called ‘sliding part’.

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD, sputtering, ion implanters etc (Col 1 lines 10-19), lift pins (Fig 1-30), robot arm (Fig 4 and Col 2 lines 13-16), stopping pin (40 being used to align the substrate) and groove around susceptor to collect

Art Unit: 1792

deposition so that build up on the surface of the susceptor may not cause problem by sticking to the substrate (Fig 3-38 and Col 4 lines 54-63). Further, entire area inside the groove is available as a sliding part.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have grooves on the susceptor in order to avoid problems of substrate sticking.

Regarding the limitation “all four edges”, it is noted that Tepman discloses groove and sliding portion all around which is equivalent for a rectangular substrate/susceptor to “all four edges”. Rectangular substrates and susceptors are well known and disclosed previously.

Regarding the limitation “wherein a length of said sliding portion, measured from said groove, is about 10 mm”, according to the AAPA sliding distance is 5mm.

Regarding the above, to increase the sliding distance from 5mm to 10mm is only an optimization to improve loading of the substrate. This kind of optimization has been considered obvious. Further, original specification suggests the distance in the claimed invention to be 3-10mm (See for example Para 28 and claim 2 of the publication (US 2002/0083896)).

Regarding the shape of the grooves: It was held in *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that the shape was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular shape was significant. (Also see MPEP 2144.04(d)).

Similarly, *regarding change in size/proportion*: It was held in *re Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984) that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative

Art Unit: 1792

dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

**10. Claims 1, 4-8, 10 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of DuBois et al (US 5855687).**

AAPA is discussed above.

DuBois et al like Tepman as above disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48). Further, entire area inside the groove is available as a sliding part.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have grooves on the susceptor in order to avoid problems of substrate sticking.

**11. Claims 4 and 10 are also rejected under 35 U.S.C. 103(a) as being unpatentable over (AAPA) in view of Tepman et al (US 5589224) or alternatively in view of DuBois et al (US 5855687) as applied to claims (1, 4-8, 10-11, 15 and 16) and further in view of Rempei Nakata (US 5119761).**

Tepman et al and DuBois et al as discussed above do not disclose the susceptor to be made of Quartz.

Art Unit: 1792

Quartz susceptors are common for thermal processing for its thermal insulation properties.

Rempei Nakata discloses a quartz susceptor (Fig 12-106 and Col 1 lines 44-49).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a susceptor of quartz for its excellent thermal properties of insulation.

***Response to Amendment***

Applicant's arguments filed 6/12/2009 have been fully considered but they are not persuasive.

Applicant argues that in Tepman et al. and DuBois et al., the groove 38 is formed only on two edges of the substrate support 16A and is not arranged or provided in all four edges of the support.

In response it is noted that the groove is all around.

Applicant argues further, that in Tepman the portion where the substrate 14 is lowered onto the support 16A is extremely small and much less than the claimed 10 mm and the sliding portion near the groove 38 is about 1 mm, much less than the claimed invention.

Regarding Dubois et al., the applicant argues that the sliding portion beginning at reference number 52 is also very small and much less than the 10 mm

In response, it is noted all the surface inside of the grooves is usable for sliding in both Tepman et al. and DuBois et al.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ram N Kackar/  
Primary Examiner, Art Unit 1792